Crossroads (Bellevue)

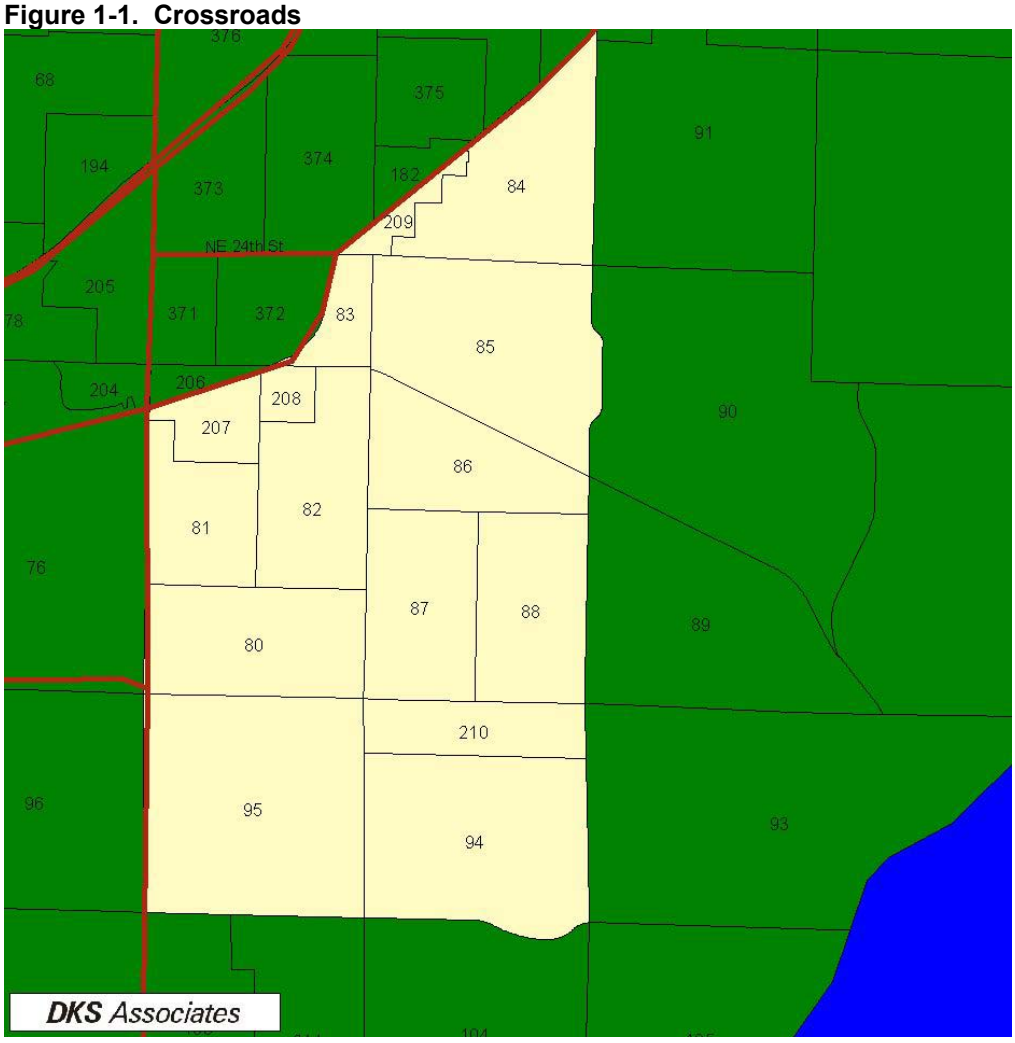
1.0 Setting and Physical Characteristics

1.1 Location

Crossroads is an area of 8,895 acres bounded by Bellevue-Redmond Road on the north, 148th Avenue N.E. on the west, Main Street on the south, and 164th Avenue N.E. on the east. The case study area boundaries are illustrated in Figure 1-1.

Crossroads contains a mix of residential, office, and retail uses. Strong single-family neighborhoods, an abundance of multifamily complexes, Crossroads Shopping Center, and office complexes mix together compatibly. Crossroads residents and merchants refer to their part of town as a "city within a city".

Figure 1-1. Crossroads



1.2 Land Use Character and Mix

There are 4,390 residential units in Crossroads. Of those, 1,183 (27 percent) are single-family detached. The remaining 3,207 (73 percent) consist of a mix of attached units: condominiums, townhouses, and apartments. The housing mix in Crossroads suggests the presence of families, children, young adults and older residents.

Crossroads contains some 277,099 gross square feet of retail use, 440,914 square feet of office space, 503,885 square feet of mixed use, as well as schools and facilities for area children.

The 28-acre city park known as Crossroads Center is a major feature. A youth and community center plus a par 3 golf course provide recreational opportunities for area residents. There are 5.9 additional acres of park land, 14.2 acres of open space, and 61.7 acres of school land in Crossroads.

1.3 Access to Freeways and State Facilities

As shown in Figure 1-1, SR 520 is the nearest freeway, although two other freeways, I-90 and I-405, play a large role in vehicular travel to and from the Crossroads area.

SR 520. Access to this freeway from the crossroads area is via NE 148th Avenue. SR 520 travels to the Redmond Area in the north-east direction, and to the Seattle area in the west direction.

I-90. Access to this freeway from the crossroads area is either via NE 148th Avenue or Northrup Way to West Lake Sammamish Parkway SE. I-90 travels eastern King County and beyond in the east direction, and to the Seattle area in the west direction.

I-405. The most logical access to this freeway from the crossroads area is either via NE 8th Street or SR 520, depending on both traffic conditions, and the final destination of the traveler. I-405 travels from Tukwila at its north end to Lynnwood at its south end, linking up with I-5 at either end. Roadway Network

The major gateways into the Crossroads area are NE 8th Street from the west, NE 148th Street from the north, SE 148th Street and SE 156th Street from the South.

1.4 Transit Services

The existing and future transit service levels are discussed in the following sections.

1.4.1 Existing Transit Service

The follow bus routes serve the Crossroads area:

Route 261 is a weekday, peak hour route with a 30-minute headway. This route services the Overlake Park and Ride, Overlake, Crossroads, N.E. 8th St., Bellevue, Clyde Hill, Medina, Montlake, and Downtown Seattle.

Route 253 services the Bear Creek Park and Ride, the Redmond Park and Ride, Redmond Civic Center, 148th Ave NE, Overlake, Crossroads, and the Bellevue Transit Center. This route has a 30-minute weekday headway and a 60-minute weekend headway.

Route 245 services Kirkland, the Houghton Park and Ride, Redmond, Overlake, Bellevue, the Eastgate Park and Ride, and Factoria. This route operates on both the weekday and the weekend. This route has a 30-minute headway on weekdays and Saturdays and a 60-minute headway on Sundays.

Route 229 is a weekday route that services Overlake, Crossroads, Phantom Lake, the Eastgate Park and Ride, Factoria, and Downtown Seattle (tunnel). This is a peak hour route with a 30-minute headway.

Route 926 operates on the weekdays servicing the Crossroads Mall, 164th Ave NE, Phantom Lake, Bellevue Community College, the Eastgate Park and Ride, and DART service. The peak hour headway for this route is 30-minutes and the midday headway is 60 minutes.

Route 247 is a weekday, peak hour route with a 60-minute headway. This route services Redmond, Overlake, the Overlake Park and Ride, the Overlake Transit Center, the Eastgate Park and Ride, Factoria, the Newport Hills Park and Ride, Kennydale Freeway Station, Renton Boeing, Renton, South Renton Park and Ride, Kent, and Kent Boeing.

Route 222 operates seven days a week servicing Bellevue, Beaux Arts, South Bellevue Park and Ride, Factoria, Eastgate Park and Ride, Bellevue Community College, Overlake, and the Overlake Park and Ride. The weekday headway is 30 minutes, the Saturday headway is 30 to 60-minutes, and the Sunday headway is 60-minutes.

Route 225 operates on weekdays during the peak hours servicing Downtown Seattle (tunnel), Factoria, Eastgate Park and Ride, Phantom Lake, Overlake, and the Overlake Transit Center. This is a peak hour route with a 60-minute headway.

Route 230 services the Kingsgate Park and Ride, Totem Lake Mall, Rose Hill, 124th Ave NE, NE 85th St, Kirkland Transit Center, Lake Washington Blvd., the South Kirkland Park and Ride, Bellevue Way NE, the Bellevue Transit Center, NE 8th St, Crossroads, Overlake, Microsoft, 156th Ave NE, SR-520, and the Redmond Park and Ride. This route operates on both the weekday with a 30-minute headway and the weekends with a 60-minute headway.

Route 272 operates on the weekdays servicing the University District, SR-520 Freeway Stops, Crossroads, Lake Hills, the Eastgate Park and Ride, and Eastgate. This route has a peak hour headway of 30 minutes.

Route 233 services Avondale Rd NE & Avondale Pl NE, the Bear Creek Park and Ride, 148th Ave NE, 156th Ave NE, Microsoft, Overlake, Bell-Red Rd, and the Bellevue Transit Center. This route operates on weekdays with a 30-minute headway as well as Saturdays with a 60 minute headway.

Route 890 operates on the weekdays servicing the University District, SR-520 Freeway Stops, Crossroads, Lake Hills, Eastgate Park and Ride, and Eastgate.

1.4.2 Forecast Transit Service for 2030

The PSRC/Trans-Lake model was used to forecast the number of transit routes in the case study area for both the base and future conditions. Table 1-1 lists the number of routes by type (rail, ferry, high frequency bus service, and low frequency bus service), while Table 1-2 lists the frequency of service for each transit type.

A number of high frequency routes are forecast to be added in the future years. In this way, the model predicts a few less routes, but much better service.

Table 1-1. Number of Routes

Time Period	Year	Rail	Ferry	High Bus	Low Bus	Total
AM Peak	2000				21	**21**
	2030			9	8	**17**
Mid-Day	2000				20	**20**
	2030			7		**7**

Table 1-2. Frequency of Service (buses per hour)

Time Period	Year	Rail	Ferry	High Bus	Low Bus	Total
AM Peak	2000				28	**28**
	2030			40	16	**56**
Mid-Day	2000				31	**31**
	2030			28		**28**

1.5 Parking Supply, Availability and Price

The main parking lot in Crossroads is at the Crossroads Shopping Center. According to counts performed during the development of TEEM, there are approximately 2,240 free parking spaces at this location, although this count was done prior to a recent construction project. In addition, there is a huge parking lot for Top Foods that is not part of this approximate number.

Table 1-3. Parking Supply and Demand by Type

	Parking Type			
	Retail	Office	Other	Total
2000 Supply	5,167	2,133	1,659	**8,959**
2000 Demand	1,916	944	644	**3,504**
2000 D/S Ratio	0.37	0.44	0.39	**0.39**
2030 Supply				**10,769**
2030 Demand				**5,136**
2030 D/S Ratio				**0.48**

When collecting parking costs, the PSRC/Trans-Lake baseline model assumes a relatively high parking cost in many parts of the region. Then, in the implementation of the model, the parking costs are lowered for many users to reflect that many users don't pay for the full price of parking. In the implementation of TEEM, the forecast parking costs were assumed to be one-half of the baseline PSRC/Trans-Lake model to account for people whose parking costs are subsidized. The resulting parking costs are shown in Table 1-4.

Table 1-4. Average Parking Costs

	Parking Costs	
	2000	2030
Drive Alone	$0.00	$0.67
Carpool	$0.00	$0.33
Vanpool	$0.00	$0.00

1.6 Pedestrian and Bicycle Facilities

Crossroads has a unique mix of single-family and multifamily housing in proximity to shopping and activity centers which could potentially generate a good deal of pedestrian and other non-motorized traffic in the area. However, an incomplete sidewalk network in the neighborhood and lack of street connectivity means that much of this potential goes unrealized. With few through streets in the area, there is a lack of motorized and non-motorized connectivity within Crossroads. Most streets are accessways and drives into apartments that prohibit pedestrian and vehicular movement.

Crossroads Park provides a good network of nonmotorized trails, linking various land uses on all sides of the park. Improvements to sidewalks along the mall frontage on 156th Ave NE have also been made in recent years. These features, plus the addition of newly developed facilities for senior citizens and the disabled, suggest that continuing emphasis will likely be placed on pedestrian amenities and convenient access to public transit services in the future.

2.0 Population and Employment Characteristics

Population and employment data for the Crossroads area are discussed below.

2.1 Population

The size and population for both 2000 and 2030 of the case study area is given in Table 2-1. The population is expected to increase by three thousand people over the next thirty years.

Table 2-1. Background Model Information

	2000	2030
Size (sq. miles)	1.56	
Population	10,378	13,637

2.2 Employment

The total employment and the mix of employment are expected to remain relatively constant over the next thirty years Table 2-2 illustrates that there are two thousand more employees forecasted for the area in the next thirty years. These additional employees are fairly well distributed by both employment type and size of employer, as illustrated in Table 2-3.

Table 2-2. Employment by Type

	Model Employment	
	2000	2030
Retail	1,897	2,346
Office	2,104	3,717
Other	367	373
Total	**4,368**	**6,436**

Table 2-3. Employee Data by Size of Employer

	Number of Employees				Grand Total
	0-49	50-99	100-499	500+	
2000	1,665	1,058	1,646	0	4,368
2030	2,453	1,558	2,425	0	6,436

2.3 Characteristics by Transportation Analysis Zone (TAZ)

Table 2-4 lists the transit level of service definitions that were used for each TAZ, while Table-2-5 illustrates the changes in land use characteristics that are expected for each TAZ in the Crossroads area. Transit service is relatively good throughout the area, and is forecast to become even better over the next thirty years. In general, the mix of uses in the area is not forecast to change in any noticeable direction, although the density is expected to increase for many of the zones. Table 2-6 gives the population, employment and trips by local area TAZ for the Crossroads area. The summary of these characteristics was described in earlier sections. Table 2-7 shows that in the future most of the population and employment will be in zones that are better serviced by transit.

Table 2-4. Transit Level of Service Definitions

Transit Service	Definition
High 1	At least one (1) rail route or five (5) or more high frequency routes
High 2	Four (4) high frequency routes or at least fifteen (15) total routes
Medium 1	Three (3) high frequency routes or at least ten (10) total routes
Medium 2	Two (2) high frequency routes or at least five (5) total routes
Low 1	At least two (2) total routes
Low 2	Less than two (2) total routes

Table 2-5. Land Use Characterizations by Local Area TAZ

	Transit Service		Mixed-Use		Density	
TAZ	2000	2030	2000	2030	2000	2030
80	Medium 2	High 2	Medium	Medium	Low	Low
81	Medium 1	High 1	Medium	Medium	Low	Low
82	High 2	High 1	Medium	High	Medium	Medium
83	High 2	High 1	Medium	Medium	Low	Medium
84	High 2	High 1	Low	Low	Low	Low
85	High 2	High 1	High	Medium	Low	Low
86	Medium 1	High 1	High	High	Low	Low
87	Medium 2	Medium 1	Medium	Medium	Medium	Medium
88	Medium 2	Medium 1	Medium	High	Low	Medium
94	Medium 2	Medium 1	Medium	Medium	Low	Low
95	Medium 2	High 2	Medium	Medium	Low	Low
207	High 2	High 1	High	High	Low	Low
208	High 2	High 1	High	High	Low	Medium
209	High 2	High 1	Low	Low	Medium	High
210	Medium 2	Medium 1	High	High	Low	Medium

Table 2-6. Population, Employment and Trips by Local Area TAZ

		Population and Employment						Home Based Work Person Trips			
	Area	Population		Retail		Other		Productions		Attractions	
TAZ	sq. miles	2000	2030	2000	2030	2000	2030	2000	2030	2000	2030
80	0.124	1,643	1,957	0	0	129	227	1,127	1,257	249	378
81	0.076	501	566	0	0	0	0	263	283	22	26
82	0.110	2,503	3,213	121	157	154	313	1,826	2,172	491	775
83	0.031	0	0	262	288	0	301	0	0	318	717
84	0.134	766	1,062	0	0	48	53	448	535	90	109
85	0.188	338	295	0	0	1,148	1,297	191	196	1,443	1,652
86	0.102	1,475	1,724	18	19	1	2	1,075	1,170	141	166
87	0.109	153	165	1,382	1,715	41	47	112	115	1,732	2,324
88	0.107	1,307	2,036	18	16	112	416	955	1,359	255	635
94	0.196	670	839	0	0	34	34	583	586	140	183
95	0.248	810	1,164	56	79	65	67	785	917	287	338
207	0.037	14	15	6	36	88	188	7	8	185	350
208	0.016	14	19	0	0	62	298	7	9	69	330
209	0.019	0	350	17	18	219	305	0	245	281	427
210	0.063	183	230	18	19	370	541	206	207	457	632

Table 2-7. Population Employment by Transit Service

		Transit Service Level						Total
		High 1	High 2	Medium 1	Medium 2	Low 1	Low 2	
Transit Service	2000 Base	0	7	2	6	0	0	15
	2030 Base	9	2	4	0	0	0	15
Population	2000 Base	0	3,635	1,976	4,767	0	0	10,378
	2030 Base	7,245	3,121	3,271	0	0	0	13,637
Total Employment	2000 Base	0	2,125	20	2,224	0	0	4,368
	2030 Base	3,275	373	2,788	0	0	0	6,436

3.0 Travel Behavior Inventory

3.1 Person and Vehicle Trips

The person and vehicle trips for study area employees and residents are illustrated in Table 3-1. The person trips for study are employees and residents are expected to see similar growth in the next 30 years. However, the vehicle trips for employed residents are expected to grow modestly, while the study area person trips are expected to almost double. The model forecasts these conditions because of the large increase in transit service that is expected in the Crossroads area.

Table 3-1. Daily Commute Trips

	Person Trips		Vehicle Trips	
	2000	2030	2000	2030
Study Area Employee	6,159	9,042	5,218	7,278
Employed Residents	7,584	9,059	6,039	6,160

3.2 Vehicle Miles Traveled

The vehicle miles traveled to work by Crossroads employees are illustrated in Table 3-2. As one would expect, the vanpool users traveled much farther than the other modes, with drive alone and transit users traveling about the same distance.

Table 3-2. Average Vehicle Miles Traveled to Work by Mode

Mode	Vehicle Miles Traveled to Work
Drive Alone	15
Carpool	23
Vanpool	26
Transit	16
Non-Motorized	0

3.3 SR 520 Corridor Trips

About 2.2 percent of the PM Peak vehicle trips to and from Crossroads cross the SR 520 bridge. As shown in Table 3-3, a higher percentage of vehicle trips entering Crossroads use the bridge, although trips leaving the study area contribute a higher total number of vehicles to the bridge traffic. At 1,610, Crossroads trips comprise around 3.9 percent of total bridge traffic during the PM peak period.

Table 3-3. Study Area Vehicle Trips Related to SR 520 Corridor

	From the Study Area	To the Study Area	Total Trips
PM Peak Trips	35,722	18,690	54,412
Study Area Trips Crossing SR 520 Bridge	705	905	1,610
Percent of Case Study Trips Crossing SR 520 Bridge	2.0%	4.8%	3.0%

3.4 Average Vehicle Occupancy for Commute trips

The average vehicle occupancy for vehicle trips is shown in Table 3-4.

Table 3-4. Average Number of People per Vehicle

	Average Number of People
Drive Alone	1.00
Carpool	2.08
Vanpool	8.76

3.5 Historical CTR Mode Shares by Year

There are only a few CTR employers in the Crossroads area that provided updates to the CTR database on any given year. The mode-split for these employers is shown in Table 3-5. Over the years, the percent of employees that drive alone has decreased tremendously. These users have gone fairly evenly to carpools, vanpools, and transit.

Table 3-5. Mode Share for CTR Employers

	Number of Employers	Mode Choice					
		Drive Alone	**Carpool**	**Vanpool**	**Transit**	**Non-Motorized**	**Other**
1993	1	84%	13%	1%	1%	1%	0%
1995	2	85%	12%	1%	1%	1%	0%
1997	2	77%	15%	5%	1%	1%	1%
1999	3	77%	14%	5%	3%	1%	0%
2001	2	69%	17%	7%	5%	2%	1%

4.0 History with TDM and Land Use Strategies

Table 4-1 lists the percent of Crossroads employers who stated that they either did or did not offer a TDM program.

Table 4-1. Percentage of CTR Employers Who Offer a Program

		Year			
		1995	1997	1999	2001
CWW Program	Yes	0%	0%	67%	67%
	No	100%	100%	33%	33%
Telecommuting	Yes	50%	100%	33%	33%
	No	50%	0%	67%	67%
Flex Time	Yes	0%	50%	67%	67%
	No	100%	50%	33%	33%
Guaranteed Ride Home	Yes	50%	50%	67%	67%
	No	50%	50%	33%	33%
Ridematching Services	Yes	50%	50%	67%	67%
	No	50%	50%	33%	33%
Shuttle Service	Yes	0%	50%	0%	0%
	No	100%	50%	100%	100%
Bike Subsidy	Yes	0%		0%	0%
	No	100%		100%	100%
Walking Subsidy	Yes	0%	0%	0%	0%
	No	100%	100%	100%	100%
Carpool Subsidy	Yes	0%	0%	0%	0%
	No	100%	100%	100%	100%
Vanpool Subsidy	Yes	0%	50%	67%	67%
	No	100%	50%	33%	33%
Transit Subsidy	Yes	0%	0%	67%	67%
	No	100%	100%	33%	33%
Ferry Subsidy	Yes	0%	0%	0%	0%
	No	100%	100%	100%	100%
Gen. Transportation Allowance	Yes	0%	0%	0%	0%
	No	100%	100%	100%	100%
Clothes Locker	Yes	50%	50%	67%	67%
	No	50%	50%	33%	33%
Uncovered Bicycle Parking	Yes	0%	0%	33%	0%
	No	100%	100%	67%	100%
Covered Bicycle Parking	Yes	50%	50%	33%	33%
	No	50%	50%	67%	67%
Passenger Loading Area	Yes	0%	0%	0%	0%
	No	100%	100%	100%	100%
Shower Facilities	Yes	50%	50%	100%	100%
	No	50%	50%	0%	0%